IN THE CLAIMS

This listing of claims replaces all prior versions, and listings, in this application.

1. (currently amended) A method for determining whether a human or non-human mammal experiences stress effect arising from exposure to a psychological stressor, in which a chemical inducer stimulates superoxide production in a control sample above basal, wherein basal is superoxide production in the absence of said chemical inducer, the method comprising:

(a) incubating neutrophils in a control [[test]] sample, which comprises ~~comprising~~ whole blood ~~obtained from~~ that is free or substantially free of stress-induced activation or derived from an individual of the same species as said human or non-human mammal and not exposed to said stressor, in the presence of said ~~with or without a~~ chemical inducer ~~capable of stimulating superoxide production in neutrophils, said test sample being taken after exposure of said human or non-human mammal to said stressor~~;

(b) determining superoxide production in said control [[test]] sample in the presence of ~~with or without~~ said chemical inducer under *in vitro* conditions ~~at a time point when~~ that induce neutrophils to produce superoxide, wherein in said control ~~in a control sample comprising whole blood, which is free or substantially free of stress-induced activation or derived from an individual of the same species as said human or non-human mammal and not exposed to said stressor, will exhibit chemically-induced superoxide production, wherein in said test~~ sample there is increased chemically-induced superoxide production above basal ~~superoxide production in the absence of the chemical inducer~~;

(c) incubating neutrophils in a test ~~said control~~ sample, which comprises whole blood obtained from said human or non-human mammal taken after exposure to said stressor, in the presence of ~~with or without~~ said chemical inducer;

(d) determining superoxide production in said test ~~control~~ sample in the presence of ~~with or without~~ said chemical inducer under [[said]] *in vitro* conditions that induce neutrophils to produce superoxide ~~at said time point, wherein in said control~~

~~sample there is increased chemically-induced superoxide production above basal superoxide production in the absence of the chemical inducer~~; and

(e) comparing increased chemically-induced superoxide production above basal determined in said test sample with increased chemically-induced superoxide production above basal determined in said control sample;

wherein lower increased chemically-induced superoxide production above basal in said test sample compared to increased chemically-induced superoxide production above basal in said control sample is determinative ~~indicative~~ of stress effect caused by said stressor ~~and, when such stress effect is indicated, residual capacity of neutrophils in said test sample to increase superoxide production above basal after contact with said chemical inducer is a measure of coping capacity for said exposure to said stressor~~.

Claims 2-4 (canceled)

5. (previously presented) A method according to claim 1, wherein said test sample is obtained from a human.

Claim 6 (canceled)

7. (previously presented) A method according to claim 1, wherein said test sample is obtained from a farmed animal.

8. (previously presented) A method according to claim 1, wherein said test sample is obtained from a wild mammal.

9. (currently amended) A method according to claim 1, wherein the chemical inducer stimulates ~~capable of stimulating~~ superoxide production in neutrophils is phorbol myristate acetate (PMA), N-Formyl-Met-Leu-Phe (fLMP chemotactic peptide), zymosan, lipopolysaccharide or adrenaline.

10. (previously presented) A method according to claim 1, wherein superoxide production is detected using luminol or isoluminol as an amplifier and chemiluminescence is measured.

11. (currently amended) A method according to claim 1, wherein the chemical inducer stimulates ~~capable of stimulating~~ superoxide production in neutrophils is phorbol myristate acetate (PMA), superoxide production is detected using luminol as an amplifier and ~~the resulting~~ chemiluminescence is measured.

12. (previously presented) A method of screening for a compound having stress-relieving activity, the method comprising:

(a) administering a test compound to a human or non-human mammal;

(b) exposing said human or non-human mammal to a psychological stressor and measuring coping capacity using a method according to claim 1; and

(c) comparing coping capacity after administration of the test compound to coping capacity in the absence of the test compound, wherein an increase in coping capacity after administration of the test compound is indicative of stress-relieving activity of said test compound.

13. (previously presented) A method according to claim 12, wherein the test compound is administered to a non-human mammal.

14. (previously presented) A method according to claim 12, further comprising synthesizing a stress-relieving drug which is a test compound identified by said method, and/or formulating the drug into a pharmaceutical composition.

Claim 15 (canceled)

16. (currently amended) A method of treating a human or non-human mammal suffering from stress which comprises providing a stress-relieving treatment~~, such as~~

~~administering a stress-relieving drug,~~ to a human or non-human mammal identified as suffering from stress using a method according to claim 1.

17. (currently amended) A method of testing the efficacy of a proposed stress-relieving treatment which comprises exposing a human or non-human mammal to a psychological stressor in the presence and absence of said treatment and determining ~~their~~ coping capacity of the human or non-human mammal using a method according to claim [[1]] 32.

Claims 18-23 (canceled)

24. (previously presented) A method according to claim 7, wherein the farmed animal is a cow, pig, sheep, lamb or poultry.

25. (currently amended) A method for determining whether a human or non-human mammal is experiencing stress effect arising from exposure to a psychological stressor, in which a chemical inducer stimulates superoxide production in a control sample above basal, wherein basal is superoxide production in the absence of said chemical inducer, the method comprising:

(a) contacting neutrophils in a test sample, which comprises ~~comprising~~ whole blood obtained from said human or non-human mammal after exposure to said stressor, with said ~~or without a~~ chemical inducer ~~capable of stimulating superoxide production in neutrophils under conditions suitable for such stimulation~~;

(b) measuring increased ~~determining increased~~ chemically-induced superoxide production above basal~~, which is superoxide production in the absence of chemical inducer,~~ in said test sample ~~at a time point when neutrophils in a control sample comprising whole blood, which are free or substantially free of stress-induced activation or derived from a human or non-human mammal not exposed to said stressor, will exhibit chemically-induced superoxide production~~ under *in*

vitro ~~the same stimulation~~ conditions that induce neutrophils to produce superoxide; and

(c) comparing increased superoxide production above basal in said test sample with increased superoxide production above basal in a [[said]] control sample, ~~at said time point~~ which comprises whole blood that is free or substantially free of stress-induced activation or derived from an individual of the same species as said human or non-human mammal and not exposed to said stressor, contacted with said chemical inducer;

wherein lower increased chemically-induced superoxide production above basal in said test sample compared to increased chemically-induced superoxide production above basal in said control sample is determinative ~~indicative~~ of stress effect caused by said ~~psychological stressor and, where such stress effect is indicated, the lower increased chemically-induced superoxide production above basal in said test sample is a measure of coping capacity for exposure to~~ said stressor.

26. (previously presented) A method according to claim 25, wherein said test sample is obtained from a human.

27. (previously presented) A method according to claim 25, wherein said test sample is obtained from a farmed animal.

28. (previously presented) A method according to claim 25, wherein said test sample is obtained from a wild mammal.

29. (currently amended) A method according to claim 25, wherein the chemical inducer stimulates ~~capable of stimulating~~ superoxide production in neutrophils is phorbol myristate acetate (PMA), N-Formyl-Met-Leu-Phe (fLMP chemotactic peptide), zymosan, lipopolysaccharide or adrenaline.

30. (previously presented) A method according to claim 25, wherein superoxide production is detected using luminol or isoluminol as an amplifier and chemiluminescence is measured.

31. (currently amended) A method according to claim 25, wherein the chemical inducer stimulates ~~capable of stimulating~~ superoxide production in neutrophils is phorbol myristate acetate (PMA), superoxide production is detected using luminol as an amplifier and chemiluminescence is measured.

32. (new) The method according to claim 25, wherein stress effect is experienced, and further comprising measuring coping capacity for exposure to said stressor as the lower increased chemically-induced superoxide production above basal in said test sample.

33. (new) The method according to claim 1, wherein stress effect is experienced, and further comprising measuring coping capacity for exposure to said stressor as residual capacity of neutrophils in said test sample to increase superoxide production above basal after incubation in the presence of said chemical inducer.

34. (new) A method of testing the efficacy of a proposed stress-relieving treatment which comprises exposing a human or non-human mammal to a psychological stressor in the presence and absence of said treatment and determining coping capacity of the human or non-human mammal using a method according to claim 33.